Navy Advancement Center

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Advancement Handbook for Fire Control Technician

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PREFACE

The purpose of the Advancement Handbook is to help you focus your preparation for Navywide advancement-in-rating examinations. The bibliographies (BIBs) together with this handbook form a comprehensive examination study package. Since this handbook provides skill and knowledge components for each paygrade of the FT rating, it helps you concentrate your study on those areas that may be tested. This feature will help you get the most out of your study time.

Each page in Parts 1 through 4 of this Advancement Handbook presents general skill areas, specific skill areas, the knowledge factors associated with each skill area, the pertinent references that address each skill, and the subject areas that may be covered on the examination. The skill statements describe the skills you are expected to perform for each paygrade. The skill statements are <u>cumulative</u>; that is, you are responsible for the skills for the paygrade you are competing for, your present paygrade, and all paygrades below.

Although this handbook is very comprehensive, it cannot cover all the tasks performed in the rating. As a result, the advancement examinations may contain questions more detailed than described in the *"Exam Expectations"* section of the skill areas.

Remember that advancement competition is keen, so your keys to advancement include not only comprehensive advancement examination study but also sustained superior performance.

Prepared by

Naval Education and Training Professional
Development and Technology Center

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Part 1

Advancement Handbook for FT3

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General *Skill Area*	**Tactics**
A *skill* you are expected to perform from the General Skill Area above:	**Conduct Daily Systems Operation Tests (DSOT) on fire control equipment**
Knowledge you should have to perform this skill:	*How to:* • Conduct Torpedo Tube Launching Systems (TTLS) equipment Daily Systems Operations Tests (DSOT) • Conduct accuracy checks between Combat Control Systems (MK-117/CCS MK-1/BSY-1/MK-118/CCS MK-2) and shipboard sensors
References you should study to gain the knowledge you need to perform this skill:	• NAVSEA OD 44979 series • *Submarine Electronic/Optic Employment Manual*, NWP 3-13.10 • *MK-117 FCS/CCS MK-1 Operating Guidelines*, NWP 3-21.52.21 • *AN/BSY-1 Operating Guidelines*, NWP 3-21.52.22 • *MK-118 DWS/CS Operating Guidelines,* NWP 3-21.52.23 • *CCS MK-2 Operating Guidelines*, NWP 3-21.52.24 • *TBT MK-17 Mod 8-11*, NAVSEA OP 3412
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on conducting preunderways, especially those concerned with interfaces between fire control, sonar and other ship's sensor systems. There will also be questions concerning daily routines, such as watch-to-watch procedures.

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General *Skill Area*	**Tactics**
A *skill* you are expected to perform from the General Skill Area above:	**Conduct transmission checks on fire control equipment**
Knowledge you should have to perform this skill:	How to: • Conduct accuracy checks between Combat Control Systems (CCS) and shipboard sensors • Conduct CCS weapons transmission checks • Conduct firing craft operation procedures
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Nuclear Weapons Manual*, CSL/CSPINST 8120.2A • *Submarine Force Conventional Weapons Manual*, CSL/CSPINST 8500.4A • NAVSEA OD 44979 series • *TLAM Launch Platform Weapons Systems and Tactics*, NWP 3-03.2 • *Submarine Electronic/Optic Employment Manual*, NWP 3-13.10 • *Submarine Strike and Antiship Missile Employment Manual*, NWP 3-20.72 • *JMCIS Operating Guidelines for Submarine Installations*, NWP 3-21.52.03 • *MK-117 FCS/CCS MK-1 Operating Guidelines*, NWP 3-21.52.21 • *AN/BSY-1 Operating Guidelines*, NWP 3-21.52.22 • *MK-118 DWS/CS Operating Guidelines*, NWP 3-21.52.23 • *CCS MK-2 Operating Guidelines*, NWP 3-21.52.24 • *Torpedo Reference Manual – MK 48 Torpedo*, NWP 3-21.53.1 • *Submarine Torpedo Employment Manual*

	MK-48 ADCAP, NWP 3-21.53.2 • *MK-48 ADCAP Torpedo Acoustic Presets*, NWP 3-21.53.21 • *TBT MK-17 Mod 8-11*, NAVSEA OP 3412
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on conducting all weapons receipt inspections. There will also be questions about transmission checks, as well as compliance with applicable safety and loading requirements.

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General *Skill Area*	**Tactics**
A *skill* you are expected to perform from the General Skill Area above:	**Determine target parameters using all available plotting equipment and methods**

Knowledge you should have to perform this skill:	How to:
	• Use the Fire Control System (FCS) in Target Motion Analysis (TMA) modes
	• Determine target parameters using:
	  – Contact Evaluation Plot (CEP)
	  – Time Range Plot
	  – Time Frequency Plot
	  – Geographic (GEO) Plot
	  – Time Bearing (T/B) Plot
	  – a maneuvering board
	• Calculate desktop computer target parameters
	• Conduct OTH-T ambiguity resolutions
	• Conduct Target Motion Analysis

References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Nuclear Weapons Manual*, CSL/CSPINST 8120.2A • *Submarine Force Conventional Weapons Manual*, CSL/CSPINST 8500.4A • NAVSEA OD 44979 series • *Submarine Electronic/Optic Employment Manual*, NWP 3-13.10 • *TMA Techniques*, NWP 3-21.51.1 • *CCS MK-1 and AN/BSY-1 OTH-T Operating Guidelines*, NWP 3-21.52.02 • *JMCIS Operating Guidelines for Submarine Installations*, NWP 3-21.52.03 • *MK-117 FCS/CCS MK-1 Operating Guidelines*, NWP 3-21.52.21 • *AN/BSY-1 Operating Guidelines*, NWP 3-21.52.22

	• *MK-118 DWS/CS Operating Guidelines*, NWP 3-21.52.23 • *CCS MK-2 Operating Guidelines*, NWP 3-21.52.24 • *Maneuvering Board*, DMA Pub 217 • *TBT MK-17 Mod 8-11*, NAVSEA OP 3412
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on all aspects of Target Motion Analysis, with emphasis on the mechanics of operation of the fire control system and interpretation of sonar and other ship's sensor data. There will also be questions on the basic mechanics of all paper plots.

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General *Skill Area*	**Weapons Handling**
A *skill* you are expected to perform from the General Skill Area above:	**Handle and stow weapons, pyrotechnics and countermeasures**
Knowledge you should have to perform this skill:	How to: • Conduct onload or offload of weapons, pyrotechnics and countermeasures • Dispose of high-explosives from torpedoes and missiles • Conduct Vertical Launch System (VLS) missile pre-loadout checks
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Nuclear Weapons Manual*, CSL/CSPINST 8120.2A • *Submarine Force Conventional Weapons Manual*, CSL/CSPINST 8500.4A • NAVSEA OD 44979 series • *Ammunition Afloat*, NAVSEA OP 4 • *Ammunition Ashore*, NAVSEA OP 5 Vol. 1 • *Navy Nuclear Weapons Security Manual*, OPNAVINST C8126.1 • *TLAM Launch Platform Weapons Systems and Tactics*, NWP 3-03.2 • *Torpedo Reference Manual – MK 48 Torpedo*, NWP 3-21.53.1 • *Submarine Torpedo Employment Manual MK-48 ADCAP*, NWP 3-21.53.2 • *OTTO Fuel II*, NAVSEA S6340-AA-MMA-010 • *MK-15 OTTO Fuel II Detector*, NAVSEA S6340-AF-MMA-010

Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on all aspects of weapons handling, particularly those concerning procedural compliance with OD 44979.

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General *Skill Area*	**Security**
A *skill* you are expected to perform from the General Skill Area above:	**Monitor 4/5FZ alarm systems and control entry into security areas**
Knowledge you should have to perform this skill:	How to: • Control entry into security areas • Test weapons security systems
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Nuclear Weapons Manual*, CSL/CSPINST 8120.2A • *Submarine Force Conventional Weapons Manual*, CSL/CSPINST 8500.4A • NAVSEA OD 44979 series • *Navy Nuclear Weapons Security Manual*, OPNAVINST C8126.1
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on the security of special weapons and the maintenance and operation of their monitoring systems.

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General *Skill Area*	**Mechanical Systems Operation**
A *skill* you are expected to perform from the General Skill Area above:	**Clean, inspect and lubricate all fire-control equipment**
Knowledge you should have to perform this skill:	How to: • Clean and inspect mechanical equipment • Lubricate mechanical equipment • Check mechanical interlocks • Maintain AN/BST-1 systems
References you should study to gain the knowledge you need to perform this skill:	• NAVSEA OD 44979 series • NEETS Modules 1,2,5,7,8,13,16 and 22 • *Submarine Electronic/Optic Employment Manual*, NWP 3-13.10 • *Ships' Maintenance and Material Management (3-M) Manual*, OPNAVINST 4790.4C
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on performing all fire control related PMS, especially compliance with all safe work practices.

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General *Skill Area*	**Mechanical Systems Operation**
A *skill* you are expected to perform from the General Skill Area above:	**Adjust and align equipment**
Knowledge you should have to perform this skill:	• How to adjust and align mechanical equipment
References you should study to gain the knowledge you need to perform this skill:	• NAVSEA OD 44979 series • NEETS Modules 1,2,5,7,8,13,16 and 22 • *Submarine Electronic/Optic Employment Manual,* NWP 3-13.10 • *Ships' Maintenance and Material Management (3-M) Manual,* OPNAVINST 4790.4C • *TBT MK-17 Mod 8-11,* NAVSEA OP 3412
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on aligning fire control mechanical equipment, including encoders, periscope training handles and plotter mechanisms.

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General *Skill Area*	**Mechanical Systems Operation**
A *skill* you are expected to perform from the General Skill Area above:	**Isolate faults and remove and replace components on FCS equipment**
Knowledge you should have to perform this skill:	How to: • Isolate CCS equipment faults • Remove and replace CCS equipment sub-assemblies • Remove and replace CCS equipment modules • Remove and replace CCS equipment printed circuit boards (PCB) • Analyze test equipment results • Perform soldering and desoldering operations
References you should study to gain the knowledge you need to perform this skill:	• NAVSEA OD 44979 series • *AN/UYK-7 (V) Computer Set Maintenance Manual*, NAVSEA SE610-AW-MMA-010 V1 • *AN/UYK-43 (V) Computer Technical Manual*, NAVSEA SE610-NV-MMO-010 • NEETS Modules 1,2,5,7,8,13,16 and 22 • *Ships' Material and Maintenance Management (3-M) Manual*, OPNAVINST 4790.4C • *Trident Command and Control Problem Reporting System (TCPRS)*, NAVSEA T9410-AB-PRO-020
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on basic troubleshooting techniques involving symptom identification and flowchart troubleshooting using SLTMs. There will also be questions on basic supply procedures for procuring replacement parts.

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General *Skill Area*	**Mechanical Systems Operation**
A *skill* you are expected to perform from the General Skill Area above:	**Maintain special hand tools**
Knowledge you should have to perform this skill:	• How to verify CCS test equipment operations
References you should study to gain the knowledge you need to perform this skill:	• NAVSEA OD 44979 series • *AN/UYK-7 (V) Computer Set Maintenance Manual*, NAVSEA SE610-AW-MMA-010 V1 • *AN/UYK-43 (V) Computer Technical Manual*, NAVSEA SE610-NV-MMO-010 • NEETS Modules 1,2,5,7,8,13,16 and 22 • *Ships' Material and Maintenance Management (3-M) Manual*, OPNAVINST 4790.4C
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on basic care and use of special electronic test equipment and hand tools.

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General *Skill Area*	**Combat Systems Operations**
A *skill* you are expected to perform from the General Skill Area above:	**Perform operational tests on fire-control equipment and interfaces**
Knowledge you should have to perform this skill:	How to: • Monitor system operability tests • Conduct: – CCS equipment operational tests – Combat systems interface testing – Ship's data interface tests – CCS casualty mode operations – Weapons preset tests – Fault indication tests – Weapon shutdowns – Combat systems fault isolations – Monitoring subsystem operations – Load Bank Assembly (LBA) self tests • Draft: – Program Trouble Reports – Trident Command and Control Systems Problem Reports
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Conventional Weapons Manual*, CSL/CSPINST 8500.4A • NAVSEA OD 44979 series • *AN/UYK-7 (V) Computer Set Maintenance Manual*, NAVSEA SE610-AW-MMA-010 V1 • *AN/UYK-43 (V) Computer Technical Manual*, NAVSEA SE610-NV-MMO-010 • NEETS Modules 1,2,5,7,8,13,16 and 22 • *TLAM Launch Platform Weapons Systems and Tactics*, NWP 3-03.2 • *Submarine Strike and Antiship Missile*

	Employment Manual, NWP 3-20.72 • *CCS MK-1 and AN/BSY-1 OTH-T Operating Guidelines*, NWP 3-21.52.02 • *JMCIS Operating Guidelines for Submarine Installations*, NWP 3-21.52.03 • *MK-117 FCS/CCS MK-1 Operating Guidelines*, NWP 3-21.52.21 • *AN/BSY-1 Operating Guidelines*, NWP 3-21.52.22 • *MK-118 DWS/CS Operating Guidelines*, NWP 3-21.52.23 • *CCS MK-2 Operating Guidelines*, NWP 3-21.52.24 • *Torpedo Reference Manual – MK 48 Torpedo*, NWP 3-21.53.1 • *Submarine Torpedo Employment Manual MK-48 ADCAP*, NWP 3-21.53.2 • *MK-48 ADCAP Torpedo Acoustic Presets*, NWP 3-21.53.21 • *Ships' Material and Maintenance Management (3-M) Manual*, OPNAVINST 4790.4C • *TBT MK-17 Mod 8-11*, NAVSEA OP 3412 • *Trident Command and Control Problem Reporting System (TCPRS)*, NAVSEA T9410-AB-PRO-020
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on conducting pre-underways; conducting weapons related PMS; and all correspondence concerning the performance of the fire control program.

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General *Skill Area*	**Combat Systems Operation**
A *skill* you are expected to perform from the General Skill Area above:	**Interpret the displays on the FCS and the computer**
Knowledge you should have to perform this skill:	How to: • Interpret tactical non-fire control devices data displays • Interpret CCS displays • Interpret Submarine Expendable Bathythermograph (SSXBT) data for employment
References you should study to gain the knowledge you need to perform this skill:	• NAVSEA OD 44979 series • *AN/UYK-7 (V) Computer Set Maintenance Manual*, NAVSEA SE610-AW-MMA-010 V1 • *AN/UYK-43 (V) Computer Technical Manual*, NAVSEA SE610-NV-MMO-010 • NEETS Modules 1,2,5,7,8,13,16 and 22 • *CCS MK-1 and AN/BSY-1 OTH-T Operating Guidelines*, NWP 3-21.52.02 • *JMCIS Operating Guidelines for Submarine Installations*, NWP 3-21.52.03 • *MK-117 FCS/CCS MK-1 Operating Guidelines*, NWP 3-21.52.21 • *AN/BSY-1 Operating Guidelines*, NWP 3-21.52.22 • *MK-118 DWS/CS Operating Guidelines*, NWP 3-21.52.23 • *CCS MK-2 Operating Guidelines*, NWP 3-21.52.24 • *Torpedo Reference Manual – MK 48 Torpedo*, NWP 3-21.53.1 • *Submarine Torpedo Employment Manual MK-48 ADCAP*, NWP 3-21.53.2

	• *MK-48 ADCAP Torpedo Acoustic Presets*, NWP 3-21.53.21 • *Ships' Material and Maintenance Management (3-M) Manual,* OPNAVINST 4790.4C
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on all information displayed on the various fire control consoles in normal and casualty modes. There will also be questions on information displayed on equipment such as the ASVDU and the Monitoring Subsystem.

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General *Skill Area*	**Combat Systems Operation**
A *skill* you are expected to perform from the General Skill Area above:	**Use FCS switchboards, True Bearing Transmitters (TBT), Plotters, Periscopes and the computer (in normal and casualty modes)**
Knowledge you should have to perform this skill:	How to: • Use fire control switchboards • Use Target Bearing Transmitters (TBT) • Use fire control plotter equipment • Use CCS in weapons control modes • Calculate torpedo or missile presets • Assign torpedo or missile presets • Enter torpedo or missile presets • Launch weapons locally • Launch weapons electrically • Enter countermeasure presets • Launch countermeasures • Conduct torpedo snapshot attacks • Conduct Link operations • Conduct gridlock operations • Enter mine presets • Employ optical equipment (periscopes) • Perform signal ejector launches • Update fire control logs
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Conventional Weapons Manual*, CSL/CSPINST 8500.4A • NAVSEA OD 44979 series • *AN/UYK-7 (V) Computer Set Maintenance Manual*, NAVSEA SE610-AW-MMA-010 V1 • *AN/UYK-43 (V) Computer Technical Manual*, NAVSEA SE610-NV-MMO-010 • NEETS Modules 1,2,5,7,8,13,16 and 22

	- *TLAM Launch Platform Weapons Systems and Tactics*, NWP 3-03.2 - *Submarine Electronic/Optic Employment Manual*, NWP 3-13.10 - *Submarine Strike and Antiship Missile Employment Manual*, NWP 3-20.72 - *TMA Techniques*, NWP 3-21.51.1 - *CCS MK-1 and AN/BSY-1 OTH-T Operating Guidelines*, NWP 3-21.52.02 - *JMCIS Operating Guidelines for Submarine Installations*, NWP 3-21.52.03 - *MK-117 FCS/CCS MK-1 Operating Guidelines*, NWP 3-21.52.21 - *AN/BSY-1 Operating Guidelines*, NWP 3-21.52.22 - *MK-118 DWS/CS Operating Guidelines*, NWP 3-21.52.23 - *CCS MK-2 Operating Guidelines*, NWP 3-21.52.24 - *Torpedo Reference Manual – MK 48 Torpedo*, NWP 3-21.53.1 - *Submarine Torpedo Employment Manual MK-48 ADCAP*, NWP 3-21.53.2 - *MK-48 ADCAP Torpedo Acoustic Presets*, NWP 3-21.53.21 - *Ships' Material and Maintenance Management (3-M) Manual*, OPNAVINST 4790.4C - *TBT MK-17 Mod 8-11*, NAVSEA OP 3412
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on the use of fire control equipment in normal and casualty modes, particularly weapons interface equipment. There will also be questions concerning the operation of equipment receiving signals from or sending signals to the fire control system.

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General *Skill Area*	**Electronic Troubleshooting**
A *skill* you are expected to perform from the General Skill Area above:	**Perform checks on FCS equipment interlocks and battle short circuits**
Knowledge you should have to perform this skill:	• How to check electrical interlocks
References you should study to gain the knowledge you need to perform this skill:	• NAVSEA OD 44979 series • *AN/UYK-7 (V) Computer Set Maintenance Manual*, NAVSEA SE610-AW-MMA-010 V1 • *AN/UYK-43 (V) Computer Technical Manual*, NAVSEA SE610-NV-MMO-010 • NEETS Modules 1,2,5,7,8,13,16 and 22 • *Ships' Material and Maintenance Management (3-M) Manual*, OPNAVINST 4790.4C
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on the operation and maintenance of the interlocks and Battle Shorts associated with the fire control system.

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General *Skill Area*	**Electronic Troubleshooting**
A *skill* you are expected to perform from the General Skill Area above:	**Adjust for the circuit loading effects of test equipment and test for circuit continuity, grounds and shorts**
Knowledge you should have to perform this skill:	How to test for: • Circuit continuity • Grounded circuits • Shorts in circuits
References you should study to gain the knowledge you need to perform this skill:	• NAVSEA OD 44979 series • *AN/UYK-7 (V) Computer Set Maintenance Manual*, NAVSEA SE610-AW-MMA-010 V1 • *AN/UYK-43 (V) Computer Technical Manual*, NAVSEA SE610-NV-MMO-010 • NEETS Modules 1,2,5,7,8,13,16 and 22 • *Ships' Material and Maintenance Management (3-M) Manual*, OPNAVINST 4790.4C
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on basic circuit troubleshooting and testing techniques.

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General *Skill Area*	**Technical Administration**
A *skill* you are expected to perform from the General Skill Area above:	**Read and record elapsed time meters**
Knowledge you should have to perform this skill:	• How to clean and inspect electronic equipment
References you should study to gain the knowledge you need to perform this skill:	• NAVSEA OD 44979 series • *AN/UYK-7 (V) Computer Set Maintenance Manual*, NAVSEA SE610-AW-MMA-010 V1 • *AN/UYK-43 (V) Computer Technical Manual*, NAVSEA SE610-NV-MMO-010 • NEETS Modules 1,2,5,7,8,13,16 and 22 • *Ships' Material and Maintenance Management (3-M) Manual*, OPNAVINST 4790.4C
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on the use and maintenance of general-use electronic test equipment.

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General *Skill Area*	**ADP Operations**
A *skill* you are expected to perform from the General Skill Area above:	**Prepare computers for all modes of operation**
Knowledge you should have to perform this skill:	How to: • Conduct non-tactical computer equipment tests • Isolate non-tactical computer equipment faults • Remove and replace sub-assemblies on non-tactical computer equipment • Remove and replace non-tactical computer equipment modules • Remove and replace non-tactical computer equipment PCBs • Make non-tactical computer repairs
References you should study to gain the knowledge you need to perform this skill:	• NEETS Modules 1,2,5,7,8,13,16 and 22 • *JMCIS Operating Guidelines for Submarine Installations*, NWP 3-21.52.03
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on the submarine LAN, including setup, operation, maintenance and upgrade of the various components. There will also be questions on backup and casualty restoration procedures.

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General *Skill Area*	**ADP Operations**
A *skill* you are expected to perform from the General Skill Area above:	**Program the computer**
Knowledge you should have to perform this skill:	How to: • Configure non-tactical computers for operations • Use the non-tactical computer in all modes • Interpret non-tactical computer displays
References you should study to gain the knowledge you need to perform this skill:	• NEETS Modules 1,2,5,7,8,13,16 and 22 • *JMCIS Operating Guidelines for Submarine Installations*, NWP 3-21.52.03
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on program setup, maintenance and upgrade procedures, and recovery from basic program casualties.

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General *Skill Area*	**ADP Operations**
A *skill* you are expected to perform from the General Skill Area above:	**Demonstrate the proper handling of external storage media**
Knowledge you should have to perform this skill:	• How to handle external storage media properly.
References you should study to gain the knowledge you need to perform this skill:	• NEETS Modules 1,2,5,7,8,13,16 and 22 • *JMCIS Operating Guidelines for Submarine Installations*, NWP 3-21.52.03
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on the proper handling of external storage media, to include CD-ROMs, external mass storage devices, and floppy diskettes.

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General *Skill Area*	**Safety**
A *skill* you are expected to perform from the General Skill Area above:	**Comply with special weapons safety rules and all weapons handling safety standards**
Knowledge you should have to perform this skill:	How to: • Apply special weapons safety rules • Apply special weapons handling safety standards
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Nuclear Weapons Manual*, CSL/CSPINST 8120.2A • *Submarine Force Conventional Weapons Manual*, CSL/CSPINST 8500.4A • NAVSEA OD 44979 series • *Ammunition Afloat*, NAVSEA OP 4 • *Ammunition Ashore*, NAVSEA OP 5 Vol. 1 • *Navy Nuclear Weapons Security Manual*, OPNAVINST C8126.1
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on all aspects of special weapons, including regeneration, handling and reporting requirements, and associated safety and security requirements.

Part 2

Advancement Handbook for FT2

Advancement Handbook for FT2

General *Skill Area*	**Tactics**
A *skill* you are expected to perform from the General Skill Area above:	**Perform transmission checks on torpedoes and missiles**
Knowledge you should have to perform this skill:	• How to monitor CCS weapons transmission checks
References you should study to gain the knowledge you need to perform this skill:	• *CSORM* CSL/CSPINST 5400.40A • *Submarine Force Nuclear Weapons Manual*, CSL/CSPINST 8120.2A • *Submarine Force Conventional Weapons Manual*, CSL/CSPINST 8500.4A • *Operational Reports*, NWP 1-03.1 • *CCS MK-1 and BSY-1 OTH-T Operating Guidelines*, NWP 3-21.52.02 • *MK-117/CCS MK-1 Operating Guidelines*, NWP 3-21.52.21 • *AN/BSY-1 Operating Guidelines*, NWP 3-21.52.22 • *MK-118 DWS/CS Operating Guidelines*, NWP 3-21.52.23 • *CCS MK-2 Operating Guidelines*, NWP 3-21.52.24 • *Torpedo Reference Manual MK-48*, NWP 3-21.53.1 • *Submarine Torpedo Employment Manual MK-48 ADCAP*, NWP 3-21.53.2 • *MK-48 ADCAP Torpedo Acoustic Presets*, NWP 3-21.53.21 • NAVSEA OD 44979 Series • *Ships' Material and Maintenance Management (3-M) Manual* OPNAVINST 4790.4C

	• *Torpedo MK-48 Fleet Peacetime Firing Policy,* OPNAVINST C8510.13B • *Torpedo MK-48 ADCAP Fleet Peacetime Firing Policy,* OPNAVINST C8510.15
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning receipt inspections on all submarine launched weapons, proper and improper indications, and the requirements for qualifications to perform the required checks.

Advancement Handbook for FT2

General *Skill Area*	**Tactics**
A *skill* you are expected to perform from the General Skill Area above:	**Determine, assign and enter presets on torpedoes, missiles and countermeasures**
Knowledge you should have to perform this skill:	How to: • Calculate mine presets • Operate AN/BST-1 systems
References you should study to gain the knowledge you need to perform this skill:	• *CSORM* CSL/CSPINST 5400.40A • *Submarine Force Nuclear Weapons Manual,* CSL/CSPINST 8120.2A • *Submarine Force Conventional Weapons Manual,* CSL/CSPINST 8500.4A • *TLAM C/D Employment Manual,* NWP 3-03.1 • *TLAM Launch Platform Weapons Systems and Tactics,* NWP 3-03.2 • *Submarine Approach and Attack Manual,* NWP 3-21.21 • *MK-117/CCS MK-1 Operating Guidelines,* NWP 3-21.52.21 • *AN/BSY-1 Operating Guidelines,* NWP 3-21.52.22 • *MK-118 DWS/CS Operating Guidelines,* NWP 3-21.52.23 • *CCS MK-2 Operating Guidelines,* NWP 3-21.52.24 • *Submarine Tactical Weapons Employment Manual,* NWP 3-21.53 • *Torpedo Reference Manual MK-48,* NWP 3-21.53.1 • *Submarine Torpedo Employment Manual MK-48 ADCAP,* NWP 3-21.53.2 • *MK-48 ADCAP Torpedo Acoustic Presets,* NWP 3-21.53.21

	• NAVSEA OD 44979 Series • *Torpedo MK-48 Fleet Peacetime Firing Policy,* OPNAVINST C8510.13B • *Torpedo MK-48 ADCAP Fleet Peacetime Firing Policy,* OPNAVINST C8510.15 • *SFMPL 5.1.X Employment Manual,* TM FZ1460-1-98
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on the tactical situations requiring the selection of the proper weapon and the tactics associated with that weapon, and situational requirements for the use of countermeasures.

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General *Skill Area*	**Tactics**
A *skill* you are expected to perform from the General Skill Area above:	**Conduct an attack and reattack on a localized target and compute torpedo track**
Knowledge you should have to perform this skill:	• How to compute torpedo or missile geometries
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Approach and Attack Manual,* NWP 3-21.21 • *TMA Techniques,* NWP 3-21.51.1 • *Towed Array TMA Techniques,* NWP 3-21.51.2 • *JMCIS Operating Guidelines for Submarine Installations,* NWP 3-21.52.03 • *MK-117/CCS MK-1 Operating Guidelines,* NWP 3-21.52.21 • *AN/BSY-1 Operating Guidelines,* NWP 3-21.52.22 • *MK-118 DWS/CS Operating Guidelines,* NWP 3-21.52.23 • *CCS MK-2 Operating Guidelines,* NWP 3-21.52.24 • *Submarine Tactical Weapons Employment Manual,* NWP 3-21.53 • *Torpedo Reference Manual MK-48,* NWP 3-21.53.1 • *Submarine Torpedo Employment Manual MK-48 ADCAP,* NWP 3-21.53.2 • *MK-48 ADCAP Torpedo Acoustic Presets,* NWP 3-21.53.21 • NAVSEA OD 44979 Series • *Torpedo MK-48 Fleet Peacetime Firing Policy,* OPNAVINST C8510.13B

	• *Torpedo MK-48 ADCAP Fleet Peacetime Firing Policy,* OPNAVINST C8510.15
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning all portions of the torpedo LOS; how to reach and maintain the preferred firing position; weapon steers; and how to conduct overwater planning to guide a TLAM to FPPWP.

Advancement Handbook for FT2

General *Skill Area*	**Tactics**
A *skill* you are expected to perform from the General Skill Area above:	**Launch weapons locally, electrically, and in casualty mode**
Knowledge you should have to perform this skill:	• How to conduct weapons casualty launches
References you should study to gain the knowledge you need to perform this skill:	• *TLAM Launch Platform Weapons Systems and Tactics,* NWP 3-03.2 • *MK-117/CCS MK-1 Operating Guidelines,* NWP 3-21.52.21 • *AN/BSY-1 Operating Guidelines,* NWP 3-21.52.22 • *MK-118 DWS/CS Operating Guidelines,* NWP 3-21.52.23 • *CCS MK-2 Operating Guidelines,* NWP 3-21.52.24 • *Submarine Tactical Weapons Employment Manual,* NWP 3-21.53 • *Torpedo Reference Manual MK-48,* NWP 3-21.53.1 • *Submarine Torpedo Employment Manual MK-48 ADCAP,* NWP 3-21.53.2 • *MK-48 ADCAP Torpedo Acoustic Presets,* NWP 3-21.53.21 • NAVSEA OD 44979 Series • *Torpedo MK-48 Fleet Peacetime Firing Policy,* OPNAVINST C8510.13B • *Torpedo MK-48 ADCAP Fleet Peacetime Firing Policy,* OPNAVINST C8510.15

Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on launching all submarine weapons, using all available methods and under all system configurations.

Advancement Handbook for FT2

General *Skill Area*	**Tactics**
A *skill* you are expected to perform from the General Skill Area above:	**Perform Over The Horizon Targeting (OTH-T) communications**
Knowledge you should have to perform this skill:	How to: • Conduct TOMAHAWK Command Information Updates • Conduct Mission Data Update (MDU) operations in all modes • Conduct mission data verification • Conduct mission data validation • Conduct OTH-T plotting • Conduct Force Over The Horizon Coordinator (FOTC) Participant operations • Conduct FOTC Non-Participant operations • Recommend transfer of OTH database tracks to CCS • Employ Submarine Operational Data Link (SODL) communications • Employ Submarine Tactical Data Link (STDL) communications
References you should study to gain the knowledge you need to perform this skill:	• *Operational Reports,* NWP 1-03.1 • *TLAM C/D employment Manual,* NWP 3-03.1 • *TLAM Launch Platform Weapons Systems and Tactics,* NWP 3-03.2 • *CCS MK-1 and BSY-1 OTH-T Operating Guidelines,* NWP 3-21.52.02 • *JMCIS Operating Guidelines for Submarine Installations,* NWP 3-21.52.03 • *MK-117/CCS MK-1 Operating Guidelines,* NWP 3-21.52.21 • *AN/BSY-1 Operating Guidelines,* NWP 3-

	21.52.22 • *MK-118 DWS/CS Operating Guidelines,* NWP 3-21.52.23 • *CCS MK-2 Operating Guidelines,* NWP 3-21.52.24 • NAVSEA OD 44979 Series • *LINK11/TADIL A Standard Operating Procedures,* OPNAVINSTC3120.44 • *SFMPL 5.1.X Employment Manual,* TM FZ1460-1-98
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning TLAM mission validation, verification and conduct of an MDU via all available methods; participant and non-participant operations; STDL and SODL communications, and transfer of OTH track data to FCS.

Advancement Handbook for FT2

General *Skill Area*	**Tactics**
A *skill* you are expected to perform from the General Skill Area above:	**Perform Contact Motion Analysis and Target Motion Analysis (CMA/TMA) using the FCS in normal and casualty modes and recommend ownship's maneuvers to prosecute the contact of interest (COI)**
Knowledge you should have to perform this skill:	• How to recommend ship maneuvers to prosecute a contact of interest (COI)
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Electronic/Optic Employment Manual,* NWP 3-13.10 • *Submarine Approach and Attack Manual,* NWP 3-21.21 • *TMA Techniques,* NWP 3-21.51.1 • *Towed Array TMA Techniques,* NWP 3-21.51.2 • *JMCIS Operating Guidelines for Submarine Installations,* NWP 3-21.52.03 • *MK-117/CCS MK-1 Operating Guidelines,* NWP 3-21.52.21 • *AN/BSY-1 Operating Guidelines,* NWP 3-21.52.22 • *MK-118 DWS/CS Operating Guidelines,* NWP 3-21.52.23 • *CCS MK-2 Operating Guidelines,* NWP 3-21.52.24 • *Submarine Tactical Weapons Employment Manual,* NWP 3-21.53 • *Torpedo Reference Manual MK-48,* NWP 3-21.53.1 • *Submarine Torpedo Employment Manual MK-48 ADCAP,* NWP 3-21.53.2 • *MK-48 ADCAP Torpedo Acoustic Presets,*

	NWP 3-21.53.21
	• *Evasion, Pyrotechnic and Evasion Devices Manual,* NWP 3-21.53.3
	• NAVSEA OD 44979 Series
	• *Torpedo MK-48 Fleet Peacetime Firing Policy,* OPNAVINST C8510.13B
	• *Torpedo MK-48 ADCAP Fleet Peacetime Firing Policy,* OPNAVINST C8510.15
	• *SFMPL 5.1.X Employment Manual,* TM FZ1460-1-98
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on all aspects of TMA and the LOS diagram; how to maneuver ownship to gain and maintain tactical control of the tracking situation, and how to reach the preferred firing position.

Advancement Handbook for FT2

General *Skill Area*	**Weapons Handling**
A *skill* you are expected to perform from the General Skill Area above:	**Inspect the 4/5FZ torpedo locking devices and test the security alarm systems**
Knowledge you should have to perform this skill:	How to: • Inspect 4/5FZ torpedo locking devices • Test the security alarm systems
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Maintenance Manual,* CSL/CSPINST 4790.4 • *Submarine Force Nuclear Weapons Manual,* CSL/CSPINST 8120.2A • *Submarine Force Training Manual,* CSL/CSPINST C3500.1A • NAVSEA OD 44979 Series • *Ships' Material and Maintenance Management (3-M) Manual,* OPNAVINST 4790.4C • *Security Alarm System Circuit 5FZ,* SE168-A1-MMA-010 • *Security Alarm System Circuit 4FZ,* SE168-AB-MMA-010
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning the security requirements applicable to special weapons and how to inspect and use the 4/5FZ circuits to safeguard special weapons.

Advancement Handbook for FT2

General *Skill Area*	**Weapons Handling**
A *skill* you are expected to perform from the General Skill Area above:	**Perform preset, firing sequence, and system shutdown tests on Submarine Launched Mobile Mines (SLMM)**
Knowledge you should have to perform this skill:	How to: • Perform Submarine Launched Mobile Mines (SLMM) preset tests • Perform SLMM firing sequence tests • Perform SLMM systems shutdown
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Conventional Weapons Manual,* CSL/CSPINST 8500.4A • *MK-117/CCS MK-1 Operating Guidelines,* NWP 3-21.52.21 • *AN/BSY-1 Operating Guidelines,* NWP 3-21.52.22 • *MK-118 DWS/CS Operating Guidelines,* NWP 3-21.52.23 • *CCS MK-2 Operating Guidelines,* NWP 3-21.52.24 • *Submarine Tactical Weapons Employment Manual,* NWP 3-21.53 • NAVSEA OD 44979 Series • *SFMPL 5.1.X Employment Manual,* TM FZ1460-1-98
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning all phases of a mine plant, including planning, positioning and execution of the plant plan; testing and programming of the mines, and shutting down the mines.

Advancement Handbook for FT2

General *Skill Area*	**Weapons Handling**
A *skill* you are expected to perform from the General Skill Area above:	**Perform the fault indication sequence, firing sequence, and system shutdown tests on UGM-109 Tomahawk**
Knowledge you should have to perform this skill:	• How to conduct PVC operations in all modes
References you should study to gain the knowledge you need to perform this skill:	• *TLAM Launch Platform Weapons Systems and Tactics,* NWP 3-03.2 • NAVSEA OD 44979 Series
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning operation of the PVC system in automatic and manual modes; pressure limits for all modes, and how to monitor the TLAM for abnormal conditions.

Advancement Handbook for FT2

General *Skill Area*	**Mechanical Systems Operation**
A *skill* you are expected to perform from the General Skill Area above:	**Isolate faulty components and circuits on the FCS equipment**
Knowledge you should have to perform this skill:	How to: • Isolate TTLS or VLS equipment faults • Remove and replace subassemblies on TTLS or VLS equipment • Remove and replace components on TTLS or VLS equipment • Troubleshoot fire control switchboards • Monitor CCS equipment fault isolation
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Maintenance Manual,* CSL/CSPINST 4790.4 • *CSORM* CSL/CSPINST 5400.40A • *Submarine Force Training Manual,* CSL/CSPINST C3500.1A • NAVSEA OD 44979 Series • *Ships' Material and Maintenance Management (3-M) Manual,* OPNAVINST 4790.4C
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning troubleshooting casualty conditions on all fire control, torpedo tube launching, and vertical launching equipment; and how to recognize and troubleshoot faults in the various fire control switchboards.

Advancement Handbook for FT2

General *Skill Area*	**Mechanical Systems Operation**
A *skill* you are expected to perform from the General Skill Area above:	**Test and use Radiac sets**
Knowledge you should have to perform this skill:	• How to test and use AN/PDR-73 Radiac sets
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Maintenance Manual,* CSL/CSPINST 4790.4 • *Submarine Force Nuclear Weapons Manual,* CSL/CSPINST 8120.2A • *Submarine Force Training Manual,* CSL/CSPINST C3500.1A • *AN/PDR-73 Tritium Monitor Manual,* NAVSEA EE730-HA-OMI-010 • NAVSEA OD 44979 Series • *Ships' Material and Maintenance Management (3-M) Manual,* OPNAVINST 4790.4C
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning the proper use of shipboard Radiacs associated with special weapons casualty conditions.

Advancement Handbook for FT2

General *Skill Area*	**Combat Systems Operation**
A *skill* you are expected to perform from the General Skill Area above:	**Conduct and annotate system operability, weapon firing sequence, weapon shutdown, and missile environmental indications tests**
Knowledge you should have to perform this skill:	How to: • Conduct VLS operation tests • Annotate weapons systems test data • Monitor weapons firing sequence tests

References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Conventional Weapons Manual,* CSL/CSPINST 8500.4A • *TLAM C/D employment Manual,* NWP 3-03.1 • *TLAM Launch Platform Weapons Systems and Tactics,* NWP 3-03.2 • *MK-117/CCS MK-1 Operating Guidelines,* NWP 3-21.52.21 • *AN/BSY-1 Operating Guidelines,* NWP 3-21.52.22 • *MK-118 DWS/CS Operating Guidelines,* NWP 3-21.52.23 • *CCS MK-2 Operating Guidelines,* NWP 3-21.52.24 • *Torpedo Reference Manual MK-48,* NWP 3-21.53.1 • *Submarine Torpedo Employment Manual MK-48 ADCAP,* NWP 3-21.53.2 • *MK-48 ADCAP Torpedo Acoustic Presets,* NWP 3-21.53.21 • NAVSEA OD 44979 Series • *Ships' Material and Maintenance Management (3-M) Manual,* OPNAVINST 4790.4C
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning all levels of system operability tests, and weapons and weapons system interface tests.

Advancement Handbook for FT2

General *Skill Area*	**Combat Systems Operation**
A *skill* you are expected to perform from the General Skill Area above:	**Interpret the data displays on non-fire control devices**
Knowledge you should have to perform this skill:	• How to analyze Monitoring Subsystem alarm trends data
References you should study to gain the knowledge you need to perform this skill:	• *MK-118 DWS/CS Operating Guidelines,* NWP 3-21.52.23 • *Trident Monitoring Subsystem Operating Instructions,* SSBN726 SSM V6 PT3 BK4 • *Trident Command and Control Problem Reporting System (TCPRS),* NAVSEA T9410-AB-PRO-020
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning the analysis of Monitoring Subsystem data displays.

Advancement Handbook for FT2

General *Skill Area*	**Combat Systems Operation**
A *skill* you are expected to perform from the General Skill Area above:	**Compile data for reports concerning performance and maintenance of digital data systems and equipment, and combat systems**
Knowledge you should have to perform this skill:	How to: • Monitor CCS maintenance performance • Verify data packages
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Maintenance Manual,* CSL/CSPINST 4790.4 • *CSORM* CSL/CSPINST 5400.40A • *Submarine Force Conventional Weapons Manual,* CSL/CSPINST 8500.4A • *Submarine Software PTR,* NAVSEA 0967-LP-011-0210 • *Operational Reports,* NWP 1-03.1 • *CCS MK-1 and BSY-1 OTH-T Operating Guidelines,* NWP 3-21.52.02 • *JMCIS Operating Guidelines for Submarine Installations,* NWP 3-21.52.03 • *MK-117/CCS MK-1 Operating Guidelines,* NWP 3-21.52.21 • *AN/BSY-1 Operating Guidelines,* NWP 3-21.52.22 • *MK-118 DWS/CS Operating Guidelines,* NWP 3-21.52.23 • *CCS MK-2 Operating Guidelines,* NWP 3-21.52.24 • NAVSEA OD 44979 Series • *Ships' Material and Maintenance Management (3-M) Manual,* OPNAVINST 4790.4C

	• *Trident Command and Control Problem Reporting System (TCPRS)*, NAVSEA T9410-AB-PRO-020
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning the data needed to complete data packages for submission to TYCOM for system trend analysis.

Advancement Handbook for FT2

General *Skill Area*	**Electronic Troubleshooting**
A *skill* you are expected to perform from the General Skill Area above:	**Adjust and align FCS peripheral equipment**
Knowledge you should have to perform this skill:	• How to adjust and align electronic equipment
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Maintenance Manual,* CSL/CSPINST 4790.4 • *CSORM* CSL/CSPINST 5400.40A • *Ships' Material and Maintenance Management (3-M) Manual,* OPNAVINST 4790.4C
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning the proper method of adjusting and aligning the mechanical and electronic portions of all tactical peripheral equipment.

Advancement Handbook for FT2

General *Skill Area*	**Electronic Troubleshooting**
A *skill* you are expected to perform from the General Skill Area above:	**Remove, repair, and replace wiring and cables to electronic equipment**
Knowledge you should have to perform this skill:	How to: • Inspect and repair cable assemblies • Inspect and repair electrical cable and connector assemblies
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Maintenance Manual,* CSL/CSPINST 4790.4 • *Submarine Force Training Manual,* CSL/CSPINST C3500.1A • *Wire Wrap Procedures,* NAVSEA 23446 • *Cable and Connector Repair,* NAVSEA 45879 • *Ships' Material and Maintenance Management (3-M) Manual,* OPNAVINST 4790.4C
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning the inspection, repair and replacement, and fabrication of cables and cable connectors.

Advancement Handbook for FT2

General *Skill Area*	**Electronic Troubleshooting**
A *skill* you are expected to perform from the General Skill Area above:	**Perform modifications on digital computers and computer peripheral equipment**
Knowledge you should have to perform this skill:	• How to perform CCS alterations (i.e., Trident configuration mod, etc.)
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Maintenance Manual,* CSL/CSPINST 4790.4 • *CSORM* CSL/CSPINST 5400.40A • *Submarine Force Training Manual,* CSL/CSPINST C3500.1A • *Submarine Software, PTR* NAVSEA 0967-LP-011-0210 • *Ships' Material and Maintenance Management (3-M) Manual,* OPNAVINST 4790.4C • *Trident Command and Control Problem Reporting System (TCPRS),* NAVSEA T9410-AB-PRO-020
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning the requirements for upgrading and modifying the software and hardware of digital computers and their associated peripheral equipment.

Advancement Handbook for FT2

General *Skill Area*	**Electronic Troubleshooting**
A *skill* you are expected to perform from the General Skill Area above:	**Perform soldering, desoldering and wire wrapping**
Knowledge you should have to perform this skill:	How to: • Solder and desolder • Wire wrap
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Maintenance Manual,* CSL/CSPINST 4790.4 • *Submarine Force Training Manual,* CSL/CSPINST C3500.1A • *Wire Wrap Procedures,* NAVSEA 23446 • *Cable and Connector Repair,* NAVSEA 45879 • *Ships' Material and Maintenance Management (3-M) Manual,* OPNAVINST 4790.4C
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning the techniques and requirements of soldering, desoldering and wire wrapping.

Advancement Handbook for FT2

General *Skill Area*	**Technical Administration**
A *skill* you are expected to perform from the General Skill Area above:	**Update the fire control log, FT work log, and FTOW pass down log**
Knowledge you should have to perform this skill:	How to: • Review fire control logs • Draft CCS technical manual deficiency reports (TMDR)
References you should study to gain the knowledge you need to perform this skill:	• *CSORM* CSL/CSPINST 5400.40A • *Submarine Force Nuclear Weapons Manual,* CSL/CSPINST 8120.2A • *Submarine Force Conventional Weapons Manual,* CSL/CSPINST 8500.4A • NAVSEA OD 44979 Series
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning the requirements for FTOW log entry and review; FTOW work log entry and review; and the writing and submission requirements for technical manual and program trouble reports.

Advancement Handbook for FT2

General *Skill Area*	**ADP Operations**
A *skill* you are expected to perform from the General Skill Area above:	**Analyze computer hardware faults**
Knowledge you should have to perform this skill:	How to: • Monitor non-tactical equipment fault isolations • Analyze non-tactical computer hardware faults • Repair LAN systems • Reconfigure and upgrade non-tactical computers
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Maintenance Manual,* CSL/CSPINST 4790.4 • *Cable and Connector Repair,* NAVSEA 45879 • *JMCIS Operating Guidelines for Submarine Installations,* NWP 3-21.52.03 • *Ships' Material and Maintenance Management (3-M) Manual,* OPNAVINST 4790.4C • *SFMPL 5.1.X Employment Manual* TM FZ1460-1-98
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning all aspects of LAN management, to include installation, repair, upgrade, routine maintenance and user configuration.

Part 3

Advancement Handbook for FT1

Advancement Handbook for FT1

General *Skill Area*	**Tactics**
A *skill* you are expected to perform from the General Skill Area above:	**Perform special weapons targeting procedures**
Knowledge you should have to perform this skill:	• How to perform special weapons targeting procedures
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Nuclear Weapons Manual,* CSL/CSPINST 8120.2A • *Operational Reports,* NWP 1-03.1 • *TLAM Launch Platform Weapons Systems and Tactics,* NWP 3-03.2 • *CCS MK-1 and BSY-1 OTH-T Operating Guidelines,* NWP 3-21.52.02 • *JMCIS Operating Guidelines for Submarine Installations,* NWP 3-21.52.03 • *MK-117/CCS MK-1 Operating Guidelines,* NWP 3-21.52.21 • *AN/BSY-1 Operating Guidelines,* NWP 3-21.52.22 • NAVSEA OD 44979 Series • *SFMPL 5.1.X Employment Manual,* TM FZ1460-1-98
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning special weapons use and regeneration.

Advancement Handbook for FT1

General *Skill Area*	**Tactics**
A *skill* you are expected to perform from the General Skill Area above:	**Recommend tactics for TLAM and torpedo employment**
Knowledge you should have to perform this skill:	How to: • Recommend TLAM employment tactics • Recommend torpedo employment tactics
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Conventional Weapons Manual,* CSL/CSPINST 8500.4A • *Operational Reports,* NWP 1-03.1 • *TLAM C/D employment Manual,* NWP 3-03.1 • *TLAM Launch Platform Weapons Systems and Tactics,* NWP 3-03.2 • *Submarine Approach and Attack Manual,* NWP 3-21.21 • *JMCIS Operating Guidelines for Submarine Installations,* NWP 3-21.52.03 • *MK-117/CCS MK-1 Operating Guidelines,* NWP 3-21.52.21 • *AN/BSY-1 Operating Guidelines,* NWP 3-21.52.22 • *MK-118 DWS/CS Operating Guidelines,* NWP 3-21.52.23 • *CCS MK-2 Operating Guidelines,* NWP 3-21.52.24 • *Submarine Tactical Weapons Employment Manual,* NWP 3-21.53 • *Torpedo Reference Manual,* MK-48 NWP 3-21.53.1 • *Submarine Torpedo Employment Manual MK-48 ADCAP,* NWP 3-21.53.2 • *MK-48 ADCAP Torpedo Acoustic Presets,* NWP 3-21.53.21

	• NAVSEA OD 44979 Series • *Torpedo MK-48 Fleet Peacetime Firing Policy,* OPNAVINST C8510.13B • *Torpedo MK-48 ADCAP Fleet Peacetime Firing Policy,* OPNAVINST C8510.15 • *SFMPL 5.1.X Employment Manual,* TM FZ1460-1-98
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning the proper employment of the TLAM, from prelaunch procedures through the arrival of the missile at FPPWP; and proper employment of the MK-48 and the ADCAP torpedo, including weapon and tactic selection for surface and subsurface attack.

Advancement Handbook for FT1

General *Skill Area*	**Tactics**
A *skill* you are expected to perform from the General Skill Area above:	**Manage an OTH-T data base**
Knowledge you should have to perform this skill:	• How to conduct OTH-T database management
References you should study to gain the knowledge you need to perform this skill:	• *CCS MK-1 and BSY-1 OTH-T Operating Guidelines,* NWP 3-21.52.02 • *JMCIS Operating Guidelines for Submarine Installations,* NWP 3-21.52.03 • *MK-117/CCS MK-1 Operating Guidelines,* NWP 3-21.52.21 • *AN/BSY-1 Operating Guidelines,* NWP 3-21.52.22 • *CCS MK-2 Operating Guidelines,* NWP 3-21.52.24 • NAVSEA OD 44979 Series • *LINK11/TADIL A Standard Operating Procedures,* OPNAVINSTC3120.44 • *SFMPL 5.1.X Employment Manual,* TM FZ1460-1-98
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning all phases of database management, especially the setting of filters, SIU setup and operation, and transfer of selected target tracks to the FCS.

Advancement Handbook for FT1

General *Skill Area*	**Weapons Handling**
A *skill* you are expected to perform from the General Skill Area above:	**Coordinate and monitor system and ordnance alterations with other work centers and other facilities**
Knowledge you should have to perform this skill:	How to: • Coordinate CCS maintenance and alterations with other facilities • Coordinate CCS maintenance and alterations with other work centers • Verify CCS maintenance and alterations
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Maintenance Manual,* CSL/CSPINST 4790.4 • *CSORM,* CSL/CSPINST 5400.40A • *Submarine Force Conventional Weapons Manual,* CSL/CSPINST 8500.4A • *Ships' Material and Maintenance Management (3-M) Manual,* OPNAVINST 4790.4C
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning 3-M procedures, ship alterations, and ordnance alterations.

Advancement Handbook for FT1

General *Skill Area*	**Combat Systems Operation**
A *skill* you are expected to perform from the General Skill Area above:	**Analyze and evaluate the results of weapon order equipment**
Knowledge you should have to perform this skill:	How to: • Review weapons system messages • Monitor retargeting in all modes
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Conventional Weapons Manual,* CSL/CSPINST 8500.4A • *Operational Reports,* NWP 1-03.1 • *TLAM C/D employment Manual,* NWP 3-03.1 • *TLAM Launch Platform Weapons Systems and Tactics,* NWP 3-03.2 • *CCS MK-1 and BSY-1 OTH-T Operating Guidelines,* NWP 3-21.52.02 • *JMCIS Operating Guidelines for Submarine Installations,* NWP 3-21.52.03 • *MK-117/CCS MK-1 Operating Guidelines,* NWP 3-21.52.21 • *AN/BSY-1 Operating Guidelines,* NWP 3-21.52.22 • *MK-118 DWS/CS Operating Guidelines,* NWP 3-21.52.23 • *CCS MK-2 Operating Guidelines,* NWP 3-21.52.24 • *Submarine Tactical Weapons Employment Manual,* NWP 3-21.53 • *Torpedo Reference Manual,* MK-48 NWP 3-21.53.1 • *Submarine Torpedo Employment Manual MK-48 ADCAP,* NWP 3-21.53.2

	• *Evasion, Pyrotechnic and Evasion Devices Manual,* NWP 3-21.53.3 • NAVSEA OD 44979 Series • *SFMPL 5.1.X Employment Manual,* TM FZ1460-1-98
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning operation of the FCS, with regard to weapons control operator actions; procedures and indications of MDU; and mission verification and mission validation.

Advancement Handbook for FT1

General *Skill Area*	**Electronic Troubleshooting**
A *skill* you are expected to perform from the General Skill Area above:	**Coordinate and verify the alignment of the FCS using benchmarks**
Knowledge you should have to perform this skill:	How to: • Verify CCS alignments • Coordinate system alignment procedures • Evaluate weapons system alignment results
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Maintenance Manual,* CSL/CSPINST 4790.4 • *CSORM*, CSL/CSPINST 5400.40A • *Submarine Electronic/Optic Employment Manual,* NWP 3-13.10 • *MK-117/CCS MK-1 Operating Guidelines,* NWP 3-21.52.21 • *AN/BSY-1 Operating Guidelines,* NWP 3-21.52.22 • *MK-118 DWS/CS Operating Guidelines,* NWP 3-21.52.23 • *CCS MK-2 Operating Guidelines,* NWP 3-21.52.24 • NAVSEA OD 44979 Series • *Ships' Material and Maintenance Management (3-M) Manual,* OPNAVINST 4790.4C
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning proper alignment of the periscopes using internal and external benchmarks.

Advancement Handbook for FT1

General *Skill Area*	**Electronic Troubleshooting**
A *skill* you are expected to perform from the General Skill Area above:	**Monitor measurements, computations and corrections performed during system alignments**
Knowledge you should have to perform this skill:	• How to monitor measurements, computations, and corrections performed during system alignments
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Maintenance Manual,* CSL/CSPINST 4790.4 • *Ships' Material and Maintenance Management (3-M) Manual,* OPNAVINST 4790.4C
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning proper performance of FCS alignment procedures.

Advancement Handbook for FT1

General *Skill Area*	**Electronic Troubleshooting**
A *skill* you are expected to perform from the General Skill Area above:	**Coordinate weapon system maintenance, interface testing and fault isolation, weapon order and weapon control tests, torpedo and missile FCS maintenance, and operability tests with other work centers and other facilities.**
Knowledge you should have to perform this skill:	How to: • Monitor TTLS or VLS system maintenance • Analyze CCS interface test data • Analyze CCS operability test data • Coordinate combat systems interface testing and fault isolations • Coordinate CCS maintenance • Coordinate CCS operability tests
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Maintenance Manual,* CSL/CSPINST 4790.4 • *CSORM,* CSL/CSPINST 5400.40A • NAVSEA OD 44979 Series • *Ships Material and Maintenance Management (3-M) Manual,* OPNAVINST 4790.4C
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning the proper performance of system interface tests, pre-underway procedures and 3-M procedures, with regard to weapons receipt and maintenance.

Advancement Handbook for FT1

General *Skill Area*	**Technical Administration**
A *skill* you are expected to perform from the General Skill Area above:	**Coordinate Program Trouble Reports/Trident Command and Control Systems Problem Reporting System (PTR/TCPRS)**
Knowledge you should have to perform this skill:	How to: • Review Program Trouble Reports • Review Trident Command and Control Systems Problem Reporting Systems
References you should study to gain the knowledge you need to perform this skill:	• *CSORM,* CSL/CSPINST 5400.40A • *Submarine Force Conventional Weapons Manual,* CSL/CSPINST 8500.4A • *Submarine Software PTR,* NAVSEA 0967-LP-011-0210 • *Ships' Material and Maintenance Management (3-M) Manual,* OPNAVINST 4790.4C
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning the proper procedures for using the submarine PTR and the TCPRS.

Advancement Handbook for FT1

General *Skill Area*	**Technical Administration**
A *skill* you are expected to perform from the General Skill Area above:	**Assemble data packages**
Knowledge you should have to perform this skill:	• How to review data packages
References you should study to gain the knowledge you need to perform this skill:	• *CSORM*, CSL/CSPINST 5400.40A • *Submarine Force Conventional Weapons Manual,* CSL/CSPINST 8500.4A • *Submarine Software PTR,* NAVSEA 0967-LP-011-0210 • *Operational Reports,* NWP 1-03.1 • *Ships' Material and Maintenance Management (3-M) Manual,* OPNAVINST 4790.4C
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning the use of DGS, and the requirements of various data packages.

Advancement Handbook for FT1

General *Skill Area*	**Technical Administration**
A *skill* you are expected to perform from the General Skill Area above:	**Advise the commanding officer on the use, capabilities, reliability and operation of the FCS**
Knowledge you should have to perform this skill:	How to: • Recommend OTH-T sensor employment • Recommend mine employment tactics • Make CCS employment recommendations • Evaluate CCS operations
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Conventional Weapons Manual,* CSL/CSPINST 8500.4A • *Submarine Force Training Manual,* CSL/CSPINST C3500.1A • *Operational Reports,* NWP 1-03.1 • *TLAM C/D employment Manual,* NWP 3-03.1 • *TLAM Launch Platform Weapons Systems and Tactics,* NWP 3-03.2 • *Submarine Electronic/Optic Employment Manual,* NWP 3-13.10 • *Submarine Approach and Attack Manual,* NWP 3-21.21 • *TMA Techniques,* NWP 3-21.51.1 • *Towed Array TMA Techniques,* NWP 3-21.51.2 • *CCS MK-1 and BSY-1 OTH-T Operating Guidelines,* NWP 3-21.52.02 • *JMCIS Operating Guidelines for Submarine Installations,* NWP 3-21.52.03 • *MK-117/CCS MK-1 Operating Guidelines,* NWP 3-21.52.21 • *AN/BSY-1 Operating Guidelines,* NWP 3-21.52.22 • *MK-118 DWS/CS Operating Guidelines,*

	NWP 3-21.52.23
	• *CCS MK-2 Operating Guidelines,* NWP 3-21.52.24
	• *Submarine Tactical Weapons Employment Manual,* NWP 3-21.53
	• *Evasion, Pyrotechnic and Evasion Devices Manual,* NWP 3-21.53.3
	• NAVSEA OD 44979 Series
	• *LINK11/TADIL A Standard Operating Procedures,* OPNAVINSTC3120.44
	• *SFMPL 5.1.X Employment Manual,* TM FZ1460-1-98
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning the proper use of OTH-T sensor data; mine employment procedures; and the proper use of the FCS.

Advancement Handbook for FT1

General *Skill Area*	**Technical Administration**
A *skill* you are expected to perform from the General Skill Area above:	**Analyze equipment records and failure reports for discrepancies**
Knowledge you should have to perform this skill:	How to: • Analyze fire-control log data • Analyze equipment records for discrepancies • Analyze failure reports for discrepancies
References you should study to gain the knowledge you need to perform this skill:	• *CSORM,* CSL/CSPINST 5400.40A • *Submarine Force Conventional Weapons Manual,* CSL/CSPINST 8500.4A • *Submarine Software PTR,* NAVSEA 0967-LP-011-0210 • *Operational Reports,* NWP 1-03.1 • *TLAM C/D employment Manual,* NWP 3-03.1 • *TLAM Launch Platform Weapons Systems and Tactics,* NWP 3-03.2 • *CCS MK-1 and BSY-1 OTH-T Operating Guidelines,* NWP 3-21.52.02 • *JMCIS Operating Guidelines for Submarine Installations,* NWP 3-21.52.03 • *MK-117/CCS MK-1 Operating Guidelines,* NWP 3-21.52.21 • *AN/BSY-1 Operating Guidelines,* NWP 3-21.52.22 • *MK-118 DWS/CS Operating Guidelines,* NWP 3-21.52.23 • *CCS MK-2 Operating Guidelines,* NWP 3-21.52.24 • NAVSEA OD 44979 Series

	• *Ships' Material and Maintenance Management (3-M) Manual,* OPNAVINST 4790.4C • *SFMPL 5.1.X Employment Manual,* TM FZ1460-1-98
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning fire control log and work log taking requirements, and failure reporting requirements.

Advancement Handbook for FT1

General *Skill Area*	**ADP Operations**
A *skill* you are expected to perform from the General Skill Area above:	**Analyze computer software faults**
Knowledge you should have to perform this skill:	How to: • Analyze computer software faults data • Monitor LAN systems repairs • Monitor non-tactical computer repairs
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Maintenance Manual,* CSL/CSPINST 4790.4 • *Submarine Software PTR,* NAVSEA 0967-LP-011-0210 • *JMCIS Operating Guidelines for Submarine Installations,* NWP 3-21.52.03 • *Ships Material and Maintenance Management (3-M) Manual,* OPNAVINST 4790.4C • *SFMPL 5.1.X Employment Manual,* TM FZ1460-1-98
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning the troubleshooting of LAN operations.

Advancement Handbook for FT1

General *Skill Area*	**General Administration**
A *skill* you are expected to perform from the General Skill Area above:	**Evaluate fire-control plots**
Knowledge you should have to perform this skill:	• How to evaluate fire control plots
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Training Manual,* CSL/CSPINST C3500.1A • *TMA Techniques,* NWP 3-21.51.1 • *JMCIS Operating Guidelines for Submarine Installations,* NWP 3-21.52.03 • *SFMPL 5.1.X Employment Manual,* TM FZ1460-1-98
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning the proper use and evaluation of the various fire control paper plots.

Part 4

Advancement Handbook for FTC

Advancement Handbook for FTC

General *Skill Area*	**Tactics**
A *skill* you are expected to perform from the General Skill Area above:	**Recommend countermeasures in a given situation (torpedo evasion, contact evasion, etc.)**
Knowledge you should have to perform this skill:	How to: • Recommend evasion tactics • Coordinate TLAM engagement planning • Coordinate torpedo engagement planning • Coordinate mine employment planning
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Conventional Weapons Manual,* CSL/CSPINST 8500.4A • *Operational Reports,* NWP 1-03.1 • *TLAM C/D employment Manual,* NWP 3-03.1 • *TLAM Launch Platform Weapons Systems and Tactics,* NWP 3-03.2 • *Submarine Approach and Attack Manual,* NWP 3-21.21 • *JMCIS Operating Guidelines for Submarine Installations,* NWP 3-21.52.03 • *MK-117/CCS MK-1 Operating Guidelines,* NWP 3-21.52.21 • *AN/BSY-1 Operating Guidelines,* NWP 3-21.52.22 • *MK-118 DWS/CS Operating Guidelines,* NWP 3-21.52.23 • *CCS MK-2 Operating Guidelines,* NWP 3-21.52.24 • *Submarine Tactical Weapons Employment Manual,* NWP 3-21.53 • *Torpedo Reference Manual MK-48,* NWP 3-21.53.1 • *Submarine Torpedo Employment Manual MK-48 ADCAP,* NWP 3-21.53.2

	• *MK-48 ADCAP Torpedo Acoustic Presets,* NWP 3-21.53.21 • NAVSEA OD 44979 Series • *Torpedo MK-48 Fleet Peacetime Firing Policy,* OPNAVINST C8510.13B • *Torpedo MK-48 ADCAP Fleet Peacetime Firing Policy,* OPNAVINST C8510.15 • *SFMPL 5.1.X Employment Manual,* TM FZ1460-1-98
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning countermeasure employment; TLAM employment, from prelaunch procedures through the arrival of the missile at FPPWP; and proper employment of the MK-48 and the ADCAP torpedo, including weapon and tactic selection for surface and subsurface attack.

Advancement Handbook for FTC

General *Skill Area*	**Electronic Troubleshooting**
A *skill* you are expected to perform from the General Skill Area above:	**Analyze equipment records and failure reports to determine corrective actions for digital data equipment trends**
Knowledge you should have to perform this skill:	How to: • Review equipment trend analysis • Analyze failure reports for trends
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Maintenance Manual,* CSL/CSPINST 4790.4 • *CSORM,* CSL/CSPINST 5400.40A • *Submarine Force Conventional Weapons Manual,* CSL/CSPINST 8500.4A • *Ships' Material and Maintenance Management (3-M) Manual,* OPNAVINST 4790.4C
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning FCS data trends that indicate failures or potential failures, and troubleshooting procedures.

Advancement Handbook for FTC

General *Skill Area*	**Technical Administration**
A *skill* you are expected to perform from the General Skill Area above:	**Coordinate the maintenance of TOMAHAWK Command Information (TCI)**
Knowledge you should have to perform this skill:	• How to coordinate maintenance of Tomahawk Command Information (TCI)
References you should study to gain the knowledge you need to perform this skill:	• *Operational Reports,* NWP 1-03.1 • *TLAM Launch Platform Weapons Systems and Tactics,* NWP 3-03.2 • *MK-117/CCS MK-1 Operating Guidelines,* NWP 3-21.52.21 • *AN/BSY-1 Operating Guidelines,* NWP 3-21.52.22 • *CCS MK-2 Operating Guidelines,* NWP 3-21.52.24 • NAVSEA OD 44979 Series
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning TCI updates, MDU procedures and mission validation and verification, and ETEPP procedures.

Advancement Handbook for FTC

General *Skill Area*	**Technical Administration**
A *skill* you are expected to perform from the General Skill Area above:	**Analyze weapon system test data**
Knowledge you should have to perform this skill:	• How to analyze weapon systems test data
References you should study to gain the knowledge you need to perform this skill:	• *Submarine Force Maintenance Manual,* CSL/CSPINST 4790.4 • *CSORM,* CSL/CSPINST 5400.40A • *Submarine Force Conventional Weapons Manual,* CSL/CSPINST 8500.4A • *Ships' Material and Maintenance Management (3-M) Manual,* OPNAVINST 4790.4C • NAVSEA OD 44979 Series
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning overall system indications, troubleshooting, and trouble trend analysis.

Appendix 1

References Used in This Advancement Handbook

Note: References in this appendix are listed at the lowest rate to which they apply. Some of the references also apply to higher rates (See Parts 2 through 4).

Rate	Short Title	Long Title	Stocking Point
FT3	CSL/CSPINST 8120.2A	Submarine Force Nuclear Weapons Manual	Note 1
	CSL/CSPINST 8500.4A	Submarine Force Conventional Weapons Manual	Note 1
	DMA Pub 217	Maneuvering Board Manual	Note 2
	NAVSEA OP 3412	TBT MK-17 Mod 8-11	Note 3
	NAVSEA OP 4	Ammunition Afloat	Note 3
	NAVSEA OP 5 Vol 1	Ammunition Ashore	Note 3
	NAVSEA S6340-AA-MMA-010	OTTO Fuel II Safety, Storage, and Handling Instructions; NAVSEA S6340-AA-MMA-010	Note 4
	NAVSEA S6340-AF-MMA-010	OTTO Fuel Detector Mk 15 Mod O; NAVSEA S6340-AF-MMO-010	Note 4
	NAVSEA T9410-AB-PRO-020	TRIDENT Command and Control Problem Reporting System (TCPRS)	Note 3
	NEETS Module 1	NEETS, Module 1 – Introduction to Matter, Energy, and Direct Current; NAVEDTRA 173-01-00-88	Note 3
	NEETS Module 2	NEETS, Module 2 – Introduction to Alternating Current and Transformers; NAVEDTRA 172-02-00-91	Note 3
	NEETS Module 5	NEETS, Module 5 – Introduction to Generators and Motors; NAVEDTRA B72-05-00-94	Note 3
	NEETS Module 7	NEETS, Module 7 – Introduction to Solid-State Devices and Power Supplies; NAVEDTRA B72-05-00-92	Note 3
	NEETS Module 8	NEETS, Module 8 – Introduction to Amplifiers; NAVEDTRA 172-08-00-82	Note 3
	NEETS Module 13	NEETS, Module 13 – Introduction to Number Systems and Logic Circuits; NAVEDTRA B72-13-00-94	Note 3
	NEETS Module 16	NEETS, Module 16 – Introduction to Test Equipment; NAVEDTRA B72-16-00-96	Note 3
	NEETS Module 22	NEETS, Module 22 – Introduction to Digital Computers; NAVEDTRA B72-22-00-88	Note 3

	NWP 3-03.2	TLAM Launch Platform Weapon Systems and Tactics	Notes 3 and 5
	NWP 3-13.10	Submarine Electronic/Optic Employment Manual	Notes 3 and 5
	NWP 3-20.72	Submarine Strike and Antiship Missile Employment Manual	Notes 3 and 5
	NWP 3-21.51.1	TMA Techniques	Notes 3 and 5
	NWP 3-21.52.02	CCS MK-1 and AN/BSY-1 OTH-T Operating Guidelines	Notes 3 and 5
	NWP 3-21.52.03	JMCIS Operating Guidelines for Submarine Installations	Notes 3 and 5
	NWP 3-21.52.05	CCS MK-1 OTH-T Operating Guidelines (OTH-T Program 3.0)	Notes 3 and 5
	NWP 3-21.52.21	MK-117/CCS MK-1 Operating Guidelines	Notes 3 and 5
	NWP 3-21.52.22	AN/BSY-1 Operating Guidelines	Notes 3 and 5
	NWP 3-21.52.23	MK-118 DWS/CS Operating Guidelines	Notes 3 and 5
	NWP 3-21.52.24	CCS MK-2 Operating Guidelines	Notes 3 and 5
	NWP 3-21.53.1	Torpedo Reference Manual- MK-48 Torpedo	Notes 3 and 5
	NWP 3-21.53.2	Submarine Torpedo Employment Manual MK-48 ADCAP	Notes 3 and 5
	NWP 3-21.53.21	MK-48 ADCAP Torpedo Acoustic Presets	Notes 3 and 5
	OD 44979 Series	Firing Craft Operating Procedures and Checklists for Mk 117, CCS Mk 1, CCS Mk 2, AN/BSY-1, and DWS/CS Mk 110	Note 6
	OPNAVINST 3120.32C	Standard Organization and Regulations of the U.S. Navy	Note 7
	OPNAVINST 4790.4C	Ship's Material and Maintenance Management (3-M) Manual	Note 7
	OPNAVINST C8126.1	Navy Nuclear Weapons Security Manual	Note 8
	SE610-AW-MMA-010 V1	AN/UYK-7 (V) Computer Set Maintenance Manual	Note 3
	SE610-NV-MMO-010	AN/UYK-43 (V) Computer Technical Manual	Note 3
FT2	CSL/CSPINST 4790.4	Submarine Force Maintenance Manual	Note 10
	CSL/CSPINST 5400.40A	CSORM	Note 10
	CSL/CSPINST C3500.1A	Submarine Force Training Manual	Note 1
	NAVSEA 0967-LP-011-0210	Submarine Software PTR	Note 3
	NAVSEA 23446	Wire Wrap Procedures	Note 3
	NAVSEA EE 730-HA-OMI-010	Operation and Maintenance Instructions Radiac Set AN/PRD-73	Note3
	NAVSEA OD 45879	Cable and Connector Repair	Note 9
	NWP 1-03.1	Operational Reports	Notes 3 and 5
	NWP 3-03.1	TLAM C/D Employment Manual	Notes 3 and 5
	NWP 3-21.21	Submarine Approach and Attack Manual	Notes 3 and 5

	NWP 3-21.51.2	Towed Array TMA Techniques	Notes 3 and 5
	NWP 3-21.53	Submarine Tactical Weapons Employment Manual	Notes 3 and 5
	OPNAVINST C3120.44	LINK 11/TADIL A Operating Procedures	Note 11
	OPNAVINST 8510.13B	Torpedo MK-48 Fleet Peacetime Firing Policy	Note 12
	OPNAVINST 8510.15	Torpedo MK-48 ADCAP Fleet Peacetime Firing Policy	Note 12
	SE168-A1-MMA-010	Security Alarm System – Circuit 5FZ	Note 3
	SE168-AB-MMA-010	Torpedo Security Alarm System – Circuit 4FZ	Note 3
	SSBN726 SSM V6 P3 BK4	TRIDENT Monitoring Subsystem Operating Instructions	Note 3
	TMFZ1460-1-98	SFMPL 5.1.X Employment Manual	Note 13
FT1	(See Part 3)		
FTC	(See Part 4)		

Note 1 – Ltr request to: Commander Submarine Force
                U.S. Atlantic Fleet
                7958 Blandy Road
                Norfolk VA 23551-2492

Note 2 – National Imagery and Mapping Agency (NIMA)

Note 3 – To order, MILSTRIP to NAVICP PHILA (Stk No. from NAVSUP P2002 or via INTERNET http://www.nll.navsup.navy.mil

Note 4 – To order: MILSTRIP TO NAVICP PHILA (Stk No. from NAVSUP P2002) or via INTERNET: http://www.nll.navsup.navy.mil

Note 5 – NTIC Series B1 (CD-ROM) (See your command NWP Custodian)

Note 6 – Ltr request to: Commander
                Naval Undersea Warfare Center Division
                1176 Howell St
                Newport RI

Note 7 - INTERNET – http://neds.nebt.daps.mil/

Note 8 – Ltr request to: Chief of Naval Operations N09N
                2000 Navy Pentagon
                Washington DC 20350

Note 9 – Ltr request to: Strategic Systems Programs
                1931 Jefferson Davis Hwy
                Arlington, VA 22241-5362

Note 10 – INTERNET – http://www.dtic.mil/doctrine/jel/index.html

Note 11 - Ltr request to: Chief of Naval Operations N65
                2000 Navy Pentagon
                Washington DC 20350

Note 12 – Ltr request to: Commanding Officer
NAVPUBFORMCEN
5801 Tabor Ave
Philadelphia, PA 19120-5099

Note 13 – Point-of-contact: ComSubDevRon Twelve
DSN: 694-3168